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EXAMINER

BROWN, RUEBEN M

ART UNIT	PAPER NUMBER
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2611

DATE MAILED: 04/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/300,490

Applicant(s)

BENJAMIN ET AL.

Examiner

Reuben M. Brown

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-79 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 43-46 is/are allowed.
- 6) ☒ Claim(s) 1-42 & 47-79 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

- 1) Applicant's arguments filed 12/20/04 have been fully considered but they are not persuasive.

With respect to claim 64, applicant argues on page 14 that Subramaniam does not mention the claimed feature of 'receiving from the server image reconstruction software for the user's computer'. Examiner respectfully disagrees. Applicant points to col. 11, lines 43-47 and col. 9, lines 10-52 of the reference and argues that these passages are directed to 'supplying software from the server for tasks which the browser is incapable of performing' and thus do not read on the claimed subject matter.

However, examiner points out that Subramaniam, states that the 'helper applications may be used to display data', which reads on image reconstruction. It is clear from the passage in Subramaniam, that when images are received at a receiving system that does not have the software to display, i.e. reconstruct an image, that the helper applications perform this task, as specifically pointed out in the reference. Thus, applicant seems to be arguing that even though the helper applications are used to display the images (since the browser or other installed software are not capable of performing the task), that this does not read on image reconstruction. Examiner respectfully disagrees and points out that 'image reconstruction software' is broad enough to read on any software that is used to help to decode, decompress or generally re-

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construct the data from the format in which it is encoded (transmitted), into a format from which it can be displayed on the instant receiving system.

In order to make this point more clearly, examiner provides a discussion on the use helper applications or plug-ins, as disclosed in a Using Netscape 2 manual. Helper applications are discussed in detail in the Using Netscape 2 manual, (Chapter 16, pages 401-417) and it is specifically pointed out that helper applications are used to decode/decompress, i.e., reconstruct images that the browser does not have the capability of performing, for the particular image.

With respect to claim 1, applicant argues on page 16 that since Subramaniam relates to non-dedicated hardware client terminals, one would not think to combine the reference with Inga, which is supposedly directed to dedicated client terminals. However, even if Inga is dedicated to decompression in a specific format, one would still not be precluded from combining the two references. First of all, Inga teaches a particular data compression/decompression format (see Inga, col. 16, lines 12-67 thru col. 17, lines 1-67, for instance) with corresponding advantages, thus to the extent applicable, one of ordinary skill in the art would have been motivated to modify Subramaniam, to use this particular algorithm for image transmission and display, at least for the features disclosed. Secondly, since the whole point of helper applications as shown in Subramaniam, (and discussed in further detail by the Netscape manual), is to extend the capabilities of a user's PC (browser) to display files (images or video) that the PC would not otherwise be enabled to display, one operating the system of

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Subramaniam, would have been motivated to extend the capabilities of a user's PC browser in order to display images/video using any number of techniques, including those discussed in Inga.

As for applicant's arguments on page 16 that using Subramaniam would be counter to the goal of Inga, because supposedly the fast communication of files would be lengthened in Subramaniam, examiner also respectfully disagrees. It is pointed out that the benefits of Inga, i.e. transmitting files in a progressive manner, so as not to overload a defined bandwidth limitation, would also be beneficial in Subramaniam. This is because (1) with increased technology, there are more image processing and enhancing of images, thus the original images files to be transmitted would be getting larger, which would require more bandwidth (2) even though there may be more bandwidth available in Subramaniam, it is not unlimited and it is still desirable to use various methods to conserve bandwidth, for instance MPEG compression is also used to transmit video over TV channels, which have much higher bandwidth than PSTN lines.

With respect to claim 56, applicant argues that the claimed feature of segmenting an image into background and tissue parts and transmitting the tissue parts first, is not taught by the references. Applicant argues that transmitting images in layers, as disclosed in Inga does not relate to a selection of parts of images being transmitted first. Examiner respectfully disagrees, and points out that as pointed out in the rejection, Inga is directed to transmitting portions of images in a progressive manner. However, Inga furthermore teaches that the subscriber may select a particular region of an image, and zoom in., col. 12, lines 29-52 & col. 18, lines 35-50. Thus the claim is broad enough to read on whatever portion of the image that the user selects as

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the tissue part and everything else the background part. Then as asserted by examiner in the rejection, it would have been obvious for one of ordinary skill in the art the time the invention was made, to transmit the tissue first, at least since that is the part that the user has selected.

Claim Rejections - 35 USC § 112

- 2) Claim 79 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Newly added claim 79 recites the feature of “wherein segmenting comprises *automatically* segmenting the image into background parts and tissue parts”, emphasis added. On page 12, lines 11-24; page 16, lines 4-17 and page 18, lines 7-12 of the specification, separating the image into background and foreground is discussed. However, no positive disclosure was found that this step is performed automatically, as required in the instant claim.

Claim Rejections - 35 USC § 102

3) The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4) Claims 64-65 & 74 are rejected under 35 U.S.C. 102(e) as being anticipated by Subramaniam, (U.S. Pat # 5,859,972).

Considering claim 64, the claimed interactive method for allowing a user to obtain image data for diagnostic purposes from a server having access to stored data, comprising connecting a user's computer to the server over a communications network is met by the disclosure of Subramaniam, which teaches a system wherein client computer accesses medical images from a server computer over the Internet, see Fig. 1; Fig. 14; col. 4, lines 1-25 & col. 12, lines 1-15.

The additionally claimed step of receiving from the server image reconstruction software for the user's computer reads on the disclosure of Subramaniam that helper applications or tools may be transmitted to a client computer's browser, see col. 11, lines 38-48 & col. 12, lines 59-

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67. Subramaniam furthermore discloses that the helper applications or tools may be in the form of JAVA applets, which are executable code transmitted from a server to a client that enhance the capability of browsers to view biological or medical data that is transmitted in a format unable to be displayed by the client's browser, also see col. 9, lines 41-62.

The operation of users 13 & users 149, of requesting a biological or medical data from a server 18 or server 150, see Fig. 1 and Fig. 14, respectively, reads on the claimed step of requesting specific image data over the network, (col. 4, lines 1-67; col. 5, lines 10-50; col. 12, lines 1-35 & col. 13, lines 1-20). Subramaniam meets the claimed feature of transmitting the requested image data over the network from the server to the user's computer, col. 9, lines 61-63. The previously cited operation of the helper applications and tools, which may be downloaded and attached to a client's browser, also reads on the claimed feature of reconstructing a diagnostic quality image from the received image data using the reconstruction software, see col. 9, lines 40-62 & col. 11, lines 38-48.

Considering claims 65 & 74, Subramaniam teaches that scripts written in JAVA can be sent to the user's browser and executed there, thereby allowing interactive viewers to remain active within a web browser. This arrangement reads on the claimed features of requesting image data after receiving the image reconstruction software and within the same session. Moreover, in light of the further teaching that the server may download helper applications, since Subramaniam also teaches that helper applications could be spawned by the web browser, the

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claimed feature of requesting image data after receiving the image reconstruction software and within the same session is also provided by col. 9, lines 41-62.

Claim Rejections - 35 USC § 103

5) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6) Claims 1-36 and 47-79 are rejected under 35 U.S.C. 103(a) as being unpatentable over Subramaniam, in view of Inga, (U.S. Pat # 5,416,602)

Considering claim 1, the claimed method steps of an interactive method for allowing a user to obtain image data for diagnostic purposes corresponds directly with subject matter mention above in the rejection of claim 64, and is likewise treated. Claim 1 includes the additional limitation of progressively transmitting the image data, Subramaniam teaches that medical images may be transmitted to clients, but progressive transmission is not necessarily disclosed.

Inga discloses the very well known hierarchical encoding/decoding and progressive transmission; see Abstract; col. 5, lines 21-24; col. 12, lines 29-68 & col. 16, lines 22-34. It

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would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify Subramaniam with the technique of progressive image transmission, as taught by Inga, for the desirable benefit of reducing the amount of bandwidth needed at a given time to transmit the image, since the whole image is not immediately transmitted, see Inga col. 12, lines 21-29

It is noted that Inga specifically discusses overcoming limited bandwidths of phone networks and mentions that when wide band networks are more readily available, that the disclosed bandwidth reduction techniques may become less important. Nevertheless, Subramaniam is directed to transmission of data over the Internet, which still utilizes PSTN networks to transmit much of its data, thereby still being constrained by bandwidth limitations.

Considering claim 2, the subject matter recited in the instant claim reads on the operation of the helper applications; see Subramaniam col. 9, lines 41-62.

Considering claims 3-5, 21, 27 & 60, Official Notice is taken that at the time the invention was made, it was known in the art to transmit image selection software, such as generic GUI, graphical user interface to a client. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify Subramaniam with the technique of downloading a user interface, such as a web browser to a client, at least for the known desirable advantage of upgrading the client's software, without having physically purchase a disk/CD-Rom and do a manual installation.

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Considering claims 6-7, it would have been obvious to transmit both image selection and image reconstruction software to a client at the same time, at least in order save time and reduce the complication of separate software programs.

Considering claims 8-9, the claimed features read on the teachings of Inga of the user interactively changing the quality of image reception/display, col. 12, lines 29-52.

Considering claims 10 & 12, see Inga col. 16, lines 20-40.

Considering claims 11 & 24, even though Subramaniam/Inga discloses the use of the run-length coding compression algorithm, (col. 5, lines 24-26 & col. 7, lines 27-50) the instant recited technique is not discussed. Nevertheless, Official Notice is taken that at the time the invention was made, numerous other compression techniques were known in the art of data transmission. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify Subramaniam with the known technique of bit reduction, at least for the benefit of reducing the amount of information transmitted in an image, thereby increasing its transmission speed over a network.

As for the gray scale component recited in claim 24, Inga discloses such a technique, col. 12 & col. 16.

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Considering claims 13 & 75, the recited subject matter reads on Inga, col. 12, lines 30-52 & col. 17, lines 57-64.

Considering claims 14-17 & 70, the claimed device independent network programming language reads on the discussion of the HotJAVA in Subramaniam, col. 11, lines 38-47.

Considering claims 18-20, 25 & 53-54, the claimed feature of progressively improving quality reads on Inga, col. 12, lines 28-67; col. 16, lines 1-40, which teaches that the image data is transmitted to the user terminal in layers, such that the received image improves in quality as more layers are received.

The additionally claimed feature of using the improved images quality to decide on the processing of the reads on the operation disclosed in Inga of selectively updating only a portion of the video image, col. 12, lines 28-35 & col. 18, lines 21-50. Interactively selecting regions of interest in the images based on the progressively improved images, also reads on the above-cited operation of Inga.

Considering claim 26, Inga, col. 5, lines 14-20 & col. 18, lines 9-50 reads on the claimed subject matter.

Considering amended claim 27, the claimed steps of an interactive method for allowing a user to obtain image data from a server, correspond with subject matter mentioned above in the rejection of claims 1, 11 & 24, and are likewise analyzed.

Considering claims 28-29, the claimed subject matter reads on the system of Inga transmitting video data at a reduced resolution, based at upon the subscriber's terminal, col. 7, lines 1-15.

Considering claims 30-31, Official Notice is taken that at the time the invention was made, numerous algorithms were known in the art for adjusting the image quality of received data. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to operate the combination of Subramaniam & Inga such that any number of algorithms would be used to reduce the amount of information transmitted in an image, at least in order to present a more smooth transmission between image layers.

Considering claims 32-33 & 35, the recited feature of pyramidal composing of the image data, reads on the hierarchical arrangement of the layers of increasing resolution, see Inga, col. 12, lines 28-65.

Considering claim 34, even though Subramaniam & Inga do not discuss the claimed compression/resizing technique, Official Notice is taken that dropping rows of an image in order to resize an image, was known in the art It would have been obvious for one of ordinary skill in

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the art at the time the invention was made, to modify the combination of Subramaniam & Inga, with the feature of dropping alternating lines, at least for the known advantage in reducing the size of the image.

Considering claim 36, Inga discusses the transmission of data using compression, which requires decompression at the receiver.

Considering claim 47 & 49, Subramaniam uses the Internet; see col. 4, lines 1-10.

Considering claim 48, Official Notice is taken that dial-up connection was old in the art at the time the invention was made. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to use a dial-up connection, at least in order to utilize existing networking structures.

Considering claims 50-52, Official Notice is taken that thumbnail technology was well known in the art at the time the invention was made. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to operate Subramaniam & Inga by transmitting a catalog of thumbnail images at least for the known advantage of reducing the amount of bandwidth used to initially transmit the images.

Considering claims 55-57, Inga teaches transmitting images in layers. Inga also teaches that a user may select a particular portion of an image, at least for zooming, col. 12, lines 29-52

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& col. 18, lines 35-50 lines. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to operate the combination of Subramaniam & Inga in a manner wherein either the background or foreground image is transmitted first.

Considering claim 58, stopping the transmission of the image data before the background is sent reads on the user terminal receiving the image data with requested resolution prior to the background image being transmitted; also see Inga col. 18, lines 4-8.

Considering claim 59, Inga discusses the use of low-loss compression, but not loss-less compression, (col. 7, lines 38-50). Official Notice is taken that at the time the invention was made, loss-less transmission techniques were known in the art. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to operate Subramaniam to transmit image data for achieving loss-less transmission, for the desirable improvement of a higher quality image displayed at the end destination.

Regarding claim 60, the additionally claimed feature of stopping transmission, at a command from a user, reads on the operation of Inga, col. 15, lines 25-36 & col. 18, lines 4-21.

Considering claim 61-63, the claimed features are also met by Inga, col. 17, lines 57-67; col. 18, lines 4-8.

Considering claim 66, in light of the further teaching that the server may download helper applications, since Subramaniam also teaches that helper applications could be spawned by the web browser, the claimed feature of requesting image data after receiving the image reconstruction software and within the same session is also provided by col. 9, lines 41-62.

Considering claims 67-68, the claimed subject matter of progressively reconstructed images corresponds with subject matter mentioned above, regarding claim 1.

Considering claim 69, it would have been obvious to transmit only certain data to subscribers from a network connection, at least for the benefit of providing an ease of transmission algorithm.

Considering claim 71, it would have been obvious to enable the subscriber to view the quality of images before stopping transmission at least in order to make certain that the quality is not acceptable, also see Inga col. 18, lines 4-8.

Considering claim 72, it would have been obvious for a physician/subscriber to begin any process while waiting for images to download and reconstruct, so that time is not wasted.

Considering claim 73, the claimed image manipulation reads on zooming the image, discussed in Inga.

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Considering claim 76, it would have been obvious to utilize an industry standard browser, at least in order to reduce the costs of customized software.

Considering claims 77-78, even though Subramaniam teaches the use of Java, the reference does not state that the images may be received in the same session as receiving the image reconstruction software. However, Using Netscape 2, teaches that an applet for decompressing data, may be downloaded at the same time as the data is accessed, see page 893. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to operate Subramaniam in a manner wherein the image reconstruction software is received in the same session/after a user has selected the image data, for the desirable advantage of avoiding the PC user having to search for and download decompression software, instead these software are automatically downloaded, after the PC user selects the corresponding image file, as taught by Using Netscape 2.

Considering claim 79, the instant claim is analyzed as best understood, in light of the above 112 rejection. The feature of separation reads on the discussion in Inga, that when a user selects an area such as a lesion, (col. 12, lines 29-52), that the system zooms, i.e. separates the selected a portion image from other parts of the image. Official Notice is taken that at the time the invention was made, it was well known to automatically segment images into foreground and background images. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to operate Subramaniam & Inga to automatically separate images into

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foreground (e.g., tissue) and background, at least for the desirable advantage of avoiding an operator having to manually initiate the process.

7) Claims 37-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Subramaniam, in view of Inga, as applied to claim 36 above, and further in view of Ward, (U.S. Pat # 5, 793,735).

Considering claim 37-40, at the time the invention was made, encoding image data by predicting a pixel value, using the corresponding value of its spatial and temporal neighbors was known in the art and is taught by Ward, (Abstract; col. 3, lines 15-20; col. 4, lines 5-35; col. 4, lines 46-55. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify Subramaniam to utilize the well-known spatial/temporal interpolation techniques at least for the desirable benefit of a more smooth presentation of the image data, as taught by Ward, see col. 1, lines 45-58.

8) Claims 41-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Subramaniam & Inga, as applied to claim 41 above, and further in view of Hirabayashi, (U.S. Pat # 6,101,282).

Considering claims 41-42, at the time the invention was made, Golomb-Rice entropy encoding was well known in the art and is taught by Hirabayashi, col. 8, lines 42-48. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to

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operate the combination of Subramaniam & Inga, using the well known Golomb-Rice entropy encoding technique, at least for the desirable benefit of an efficient encoding algorithm.

Allowable Subject Matter

9) Claims 43-46 are allowed over prior art of record.

Conclusion

10) The prior art made of record and not relied upon is considered pertinent to applicant's claims.

A) Gosling Teaches benefits of Java & HotJava, such as for interaction with scientific experiments for educational purposes, games, electronic shopping, etc. see section 10.1.2.

11) THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9314, (for formal communications intended for entry)

Or:

(703) 872-9314 (for informal or draft communications, please label
"PROPOSED" or "DRAFT")

*Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,
Arlington, VA., Sixth Floor (Receptionist).*

Any inquiry concerning this communication or earlier communications from the
examiner should be directed to Reuben M. Brown whose telephone number is (703)305-2399.
The examiner can normally be reached on M-F(8:30-6:00), First Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, Christopher Grant can be reached on 703-305-4755. The fax phone numbers for the
organization where this application or proceeding is assigned is (703) 872-9314 for regular
communications and After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding
should be directed to the receptionist whose telephone number is (703)305-4700.

Reuben M. Brown


HALTRAN
PRIMARY EXAMINER